

## MEMORANDUM

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**DATE:** January 29, 2015

**SUBJECT:** Operational Position Statement for January 27 – February 2, 2015

The U.S. Army Corps of Engineers (USACE) is responsible for managing Lake Okeechobee water levels and makes operational decisions about whether to retain water or release water based on their regulation schedule release guidance (2008 LORS). The USACE makes this decision taking into account the best available science and data provided by its staff and a variety of partners, which includes the South Florida Water Management District (SFWMD).

The SFWMD team has discussed the system wide environmental conditions, the water supply conditions, and has evaluated the overall status of the water management system. Detailed reports are available at the SFWMD [Operational Planning](#) internet page.

This Position Statement is for the period from January 27 through February 2, 2015. The SFWMD recommendation to the USACE is to continue 7-day pulse releases averaging 1,500 cfs measured at S-79 and 300 cfs measured at S-80. Increases in releases to the estuaries are not desirable from an ecological point of view at this point in time. Based on a projected continuation of increased inflows from the Kissimmee River, if the USACE determines that an increase in releases is required, it is suggested that current releases be increased gradually. In the following weeks the flow changes should be adaptively managed with gradual incremental flow changes which consider the objectives of avoiding abrupt changes in flow and salinity regimes while maintaining the salinity at acceptable levels. This recommendation is within the release guidance of 2008 LORS, which currently suggests releases of up to 3,000 cfs measured at S-79 and up to 1,170 measured at S-80 may be made. A pulse type pattern is most beneficial and a table of suggested releases is included at the end of this memorandum.

The lake stage remains within the Low Sub-band and the lake recession rate over the past 30-day is 0.42 feet, an increase of 0.09 feet compared to the value reported on January 20, 2015. While the latest Climate Prediction Center (CPC) outlooks indicates that chance of official El Nino is decreasing, El Nino-like conditions exist and are expected to influence central and south Florida rainfall; albeit to a lesser magnitude than with an actual El Nino. It is likely that the current high releases to WCAs are not sustainable if expected above-average rainfall materializes. Also typical March rainfall will use most of the STA low flow capacity at times. From the lake stage management point of view it is appropriate to ramp up the estuary discharge to take advantage of the currently drier conditions. SFWMD staff continues to evaluate dry season release strategies.

The SFWMD continues to maximize the Lake Okeechobee regulatory releases to Water Conservation Area (WCA) 2A and 3A via STAs 2 and 3 / 4. Water supply deliveries continue to the EAA.

2008 LORS Release Guidance (Part C): Given the current Lake Okeechobee stage position, Part C of the 2008 LORS suggests "Up to Maximum Practicable to the WCAs if desirable or with minimum Everglades Impacts".

Consistent with the LORS release guidance, the USACE is requesting the SFWMD to continue maximum practicable Lake Okeechobee regulatory releases to the WCAs. Over the past week, water supply demands have increased, but there has been sufficient discharge capacity to continue to also move lake regulatory releases to the WCAs through STA-2 and STA-3/4. Flows from STA-3/4 are being released into northwestern WCA-3A with the continuing goal of keeping peat hydrated in that area.

2008 LORS Release Guidance (Part D): The outcome from Part D of the 2008 LORS release guidance is: “S-79 up to 3,000 cfs and S-80 up to 1,170 cfs”. Release guidance did not change compared to the last two previous weeks.

The USACE is presently conducting a 7-day pulse release averaging 1,500 cfs at S-79 and 300 cfs at S-80, which started 0700 hours on January 23, 2015 and will end 0659 hours on January 30, 2015. The current release implementation is measured at S-79 and S-80 for the Caloosahatchee Estuary and the St. Lucie Estuary, respectively, and requires that the Lake Okeechobee releases (at S-77 and S-308) be reduced to account for any local runoff into the Caloosahatchee River (C-43) between S-77 and S-79 or the St. Lucie Canal (C-44) between S-308 and S-80. This accounting is performed on a daily basis.

The current high lake level, slow rate of recession, and increasing lake inflows may prompt the need to further increased releases under LORS guidance. Estuary scientists have indicated that there is no ecological benefit associated with increased inflows into the St. Lucie Estuary from Lake Okeechobee. However, if such an increase is required, it is suggested that current releases be augmented by low amounts, followed by adaptive management with gradual incremental flow changes, if required, to avoid abrupt changes in flow and salinity regimes.

For the Caloosahatchee Estuary, additional inflows from Lake Okeechobee resulting in mean monthly flows greater than 1,500 cfs at S-79 would pose an ecological risk for oysters in the vicinity of the Cape Coral Bridge. However, under similar considerations as before, releases beyond this threshold may be necessary under LORS guidance. If an increase in releases is required, it is suggested that current releases be augmented by low amounts, followed by adaptive management with gradual incremental flow changes, if required, to avoid abrupt changes in flow and salinity regimes. It is recommended to keep any release increases to the estuaries at or below 200 cfs, on a weekly average basis.

The releases at S-79 and S-80 should be conducted in a pulse pattern, varying in both the magnitude and duration among the pulses, to mitigate potential stratification and phytoplankton accumulation in the water column. This will also help avoid deposition of organic matter in localized areas due to a repetitive flow pattern. Suggested pulse schedules are given below in the Table 1.

Lake Okeechobee scientists have indicated that although potential foraging conditions for wading birds are slowly improving, current operations and climatic conditions appear to be inadequate to maintain desired recession rates. An increase in the quantities of water discharged from the Lake over the next 30 days would be beneficial in reducing lake levels to a more ecologically suitable range and increasing the recession rate.

## **Summary of System Conditions**

### Weather and Climate

The District wide rainfall average over the past week was about 0.20 inches. Upper and Lower Kissimmee weekly rainfall amounts were 0.65 and 0.54 inches respectively. Expected rainfall for the coming week is below average. For the second week, average to below average rainfall is expected.

### Current Conditions and Operations

Some rainfall took place over the Kissimmee watersheds this past week. As of January 27, 2015, all of the upper Lakes are slightly above, at or below regulation schedule. Flows through S-61 are around 1,600 cfs and S-65 is presently releasing around 3,400 cfs. Inundation depths in the Kissimmee River floodplain are increasing.

The January 27, 2015 Lake Okeechobee stage (reported by the USACE as the stage on January 26, 2400 hours) was 14.84 feet NGVD. The lake stage had a decrease of 0.10 feet over the past week. The lake stage is about 0.42 feet lower than a month ago, about 1.0 feet higher than one year ago and 0.15 feet over the historical average. These numbers continue to indicate high lake stage and the slow stage rate of recession.

Daily release rates at the lake structures, averaged for the past week were estimated as 957 cfs at S-77 and 318 cfs at S-308. At the tidal structures, average daily discharges were about 1,466 cfs at S-79. At S-80 average daily discharges were about 336 cfs. Lake Okeechobee regulatory releases south through S-352 into STA 1E and 1W remain suspended due to observation of turbid water. Sustained loading of the STAs (STA-1 West and STA-1 East) with water of this high turbidity, even at low flow rates, will likely results in impact to the SAV cells (insufficient light penetration to support healthy SAV). Currently the conditions at S-351 and S-354 are favorable to allow continued discharges to STA 3/4 and STA-2 with STA discharges directed to WCA-2A, NW WCA-3A, Holeyland, and Rotenberger. Water supply deliveries continue to the EAA.

Wading bird foraging and breeding season has begun in the WCAs; consequently, it remains important that steady gradual recession rates continue without incurring reversals. The optimum Dry Season recession rate is -0.05 feet per week. District Everglades scientists continue to recommend inflows into NW WCA-3A.

Due to dry conditions in the L31-N canal, water releases through the S332 pumps, the C-111 Western Features at S-199 and S-200, and through S-18C ended by the middle of this past week.

Salinity is elevated at the Florida Bay Minimum Flows and Levels (MFL) site in Taylor Slough. Low rainfall, low creek flow, and wind driven saltwater surges are causing much higher salinities than normal, raising concerns that salinity levels will continue to climb and lead to an MFL violation. Everglades scientists are requesting that discharges be made as often as possible into Taylor Slough as part of an experiment to determine the effectiveness of such actions.

### SFWMD Lake Okeechobee Adaptive Protocol (AP) Release Guidance

This week the SFWMD is not applying the Lake Okeechobee Adaptive Protocol release guidance flowchart since the Lake Okeechobee stage is above the Base-flow Sub-band of the 2008 LORS. The Adaptive Protocols process is documented in the District publication Final Adaptive Protocols for Lake Okeechobee Operations (September 16<sup>th</sup>, 2010).

For additional information pertaining to operations history and past recommendations, refer to the archives of LORS-2008 Release Guidance outcomes and operational position statements at [www.sfwmd.gov](http://www.sfwmd.gov) under the Operational Planning topic.

Table 1. Schedules for 7-day and 14-day pulses at S-79 and a 7-day pulse at S-80

7-day pulses								
Day	200 cfs	300 cfs	500 cfs	800 cfs	1000 cfs	1200 cfs	1500 cfs	1700 cfs
1	200	300	500	1400	1400	1700	2000	2200
2	600	700	900	1600	1600	2100	2400	2600
3	300	500	800	1200	1300	1800	2100	2300
4	200	300	600	800	1000	1100	1400	1600
5	100	200	400	400	800	900	1200	1400
6	0	100	300	200	600	600	900	1100
7	0	0	0	0	300	200	500	700
14-day pulses								
Day	1000 cfs	1200 cfs	1500 cfs					
1	800	1000	1300					
2	1200	1500	1800					
3	1700	2000	2300					
4	2700	3000	3300					
5	2200	2400	2700					
6	1800	2000	2300					
7	1200	1400	1700					
8	800	1000	1300					
9	600	800	1100					
10	400	600	900					
11	300	400	700					
12	200	300	600					
13	100	200	500					
14	0	200	500					

\* The 200, 300, and 500 cfs pulse patterns apply to S-80.